Proposals to Revise Soil Taxonomy

Craig Ditzler

National Leader, Soil Classification and Standards

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NCSS South Region Soil Taxonomy Committee

MLRA

Office	Co-Chair's	Start	End
• MO-9	Mike Golden	June 2000	June 2002
• MO-14	Roy Vick	June 2002	June 2004
• MO-15	Charles Love	June 2004	June 2006
• MO-16	Charles Fultz	June 2006	June 2008
• MO-18	Bill Craddock	June 2008	June 2010
• NSSC	Craig Ditzler	Permanent	Co-Chair 1/

1/ (National Leader - Classification & Standards)

NCSS South Region Soil Taxonomy Committee

		Start	End
• Mike Verpraskas	- Member	Jan 1999	Dec 2001
• Larry West	- Member	Jan 2000	Dec 2002
• Moye Rutledge	- Member	Jan 2001	Dec 2003
• Joey Shaw	- Member	Jan 2002	Dec 2004
• Mike Golden	- Co-Chair	June 2000	June 2002
• Roy Vick	- Co-Chair	June 2002	June 2004
• Craig Ditzler	- Co-Chair	Permanent	

18 Proposals to Amend Soil Taxonomy

- Letter from Craig Ditzler - Dated 1/23/2002
  - Each NCSS Region is to have comments and recommendations by August 30, 2002
  - Respond to each proposal with following:
    - *Accept as is*
    - *Accept with revision (explain revisions)*
    - *Return to originator for further consideration*
    - *Reject (explain)*

South Region
Soil Taxonomy Committee

Region	Proposal
Northeast	1
South	2
Midwest	3-7
West	8-12
NHQ & NSSC Staff	13-18

1) Subaqueous Subroups

George Demas, MD (Deceased)

- Aquents that are “Permanantly submersed”
- Key out first in each great group
- Soil = ***“water not too deep for rooted plants”***
- Proposed for use in:
  - Endoaquents, Fluvaquents, Hydraquents
  - Psammaquents, Sulfaquents

1) Subaqueous Subroups

George Demas, MD (Deceased)

13 Subgroups are proposed

- All in the Aquents
- Example:
  - "Endoaquents which have sulfidic materials within 100 cm of the mineral soil surface and are permanently submersed"

» Subaquic Sulfic Endoaquents

Footnote: Some OSD's will be affected in South Region but extent unknown

2) Humic subgroups in some Inceptisols

Roy Vick, Bill Craddock, Gene Mayhugh

- Many former Umbrepts and Ochrepts went to Udepts
- Ochrepts with dark (but thin) surfaces wound up in Typic subgroups
- Rename present Humic subgroups to Umbric
- Establish (3) new subgroups for thin, dark ochrics

  Humic Dystrudepts, Fluventic Humic Dystrudepts

  Humic Fragiudepts

Footnote: Unknown number of OSD's affected in South Region

Roy will cover this proposal in more detail

3) Fragipan Definition

Dr. Don Franzmeier

- Dense calcareous tills differ from fragipans in genesis, kinds and rates of weathering, plant nutrient chemistry, and reactions with leaching chemicals.
- Remove midwestern dense tills from fragipans by: Adding a 6th required characteristic to the Fragipan: *"Is not effervescent"*
- Presumably would be densic material.

Footnote: Unknown number of OSD's affected in South Region

4) Miscellaneous Changes

Bismark MO

- Natrustalfs - Add: Aridic Glossic subgroup
- Argiudolls, Hapludolls, and Paleudolls
  - Add: Aquic Pachic subgroup & change keying order
- Hapludolls - Add: Pachic Vertic subgroup

***Footnote*:** OSD's affected in South Region

- No changes in Natrustalfs
- Aquic Pachic Argiustolls - (LA- Armistead; TX- Benklin, Faddin, & Waskom; OK- Garton)
- Aquic Pachic Paleustolls - (OK - Burwell & Okemah)
- Pachic Vertic Hapludolls - (AR- Desha)

Miscellaneous Changes
Bismark MO

- Argiustolls -Add subgroups
  - Aquertic
  - Pachic Vertic
  - Pachic Udertic

Footnote: OSD's affected in South Region

- Aquertic - (OK- Foraker, Tabler, & Westum; TX- Flatonia)
- Pachic Udertic - (OK- Brewer and Brewless; TX- Elmenwood)
- Pachic Vertic - (TX- Coy, Culp, Elmendorf, Laparita, Loftan & Popia)

Miscellaneous Changes
Bismark MO

- Haplustolls - Add subgroups:
  - Aridic Lithic
  - Aquertic
  - Pachic Udertic
  - Pachic Vertic

Footnote: OSD's affected in South Region

- Aridic Lithic - Several unspecified OSD's affected
- Aquertic - No OSD's affected
- Pachic Udertic - (TX- Divot, Eloso, Nukrum, & Rioconcho)
- Pachic Vertic - No OSD's affected

Miscellaneous Changes
Bismark MO

- Argiustolls, Calciustolls, Haplustolls
  - Reorder keys
    - From: Pachic - Aquic - Oxyaquic
    - To: Aquic - Oxyaquic - Pachic
- Paleustolls
  - Reorder keys
    - From: Pachic - Aquic
    - To: Aquic - Pachic

Footnote: No changes to OSD's recognized in South Region

4(b) - Pachic Subgroup Definitions

Gene Mayhugh

- Clarify definition to indicate that the requirement for texture finer than LFS applies to the mollic epipedon

4 (c, d) Miscellaneous
Bismarck MO

- Dystrustepts
  - Add: Torrertic, Vertic, & Aridic subgroups
- Natrargids
  - Add: Ustertic, & Xerertic subgroup

Footnote: No changes to OSD's in South Region

5) Aquic: Hapludolls, Argiudolls, Paleudolls

C.J. Heidt/G. Mayhugh

- Carbon content of sandy soils decreases before color does. (actual mollic thinner than it looks).
  1) Allow (aquic) colors below the dark horizon, not immediately below “mollic”.

OR

  2) Change reference point from base of mollic to

“≤ 100 cm of mineral surface” or

“≤ 75 cm of mineral surface”

Footnote:

- Argiudolls - (TX- Chireno & Labelle; OK- Summit)
- Paleudolls - (OK- Burwell, Choteau, & Okema)
- Haplustolls - No changes to OSD’s

6) Miscellaneous Changes

Indianapolis MO

- A) Add: Mollic Oxyaquic Hapludalfs

- B) Spodic subgroups:
  - Allow: Albic underlain by horizon 1 hue darker

Footnote:

A) Mollic Oxyaquic Hapludalf - (LA- Hendrick) only OSD affected

B) No OSD's affected in South Region

6) Miscellaneous Changes
Indianapolis MO

- C) Hapludolls

Rearrange Keying Order:

  – Move Fluventic to just below Fluvaquentic and ahead of Pachic and Oxyaquic suborders

Footnote: No OSD's affected in South Region

6) Miscellaneous Changes
Indianapolis MO

- D) Endoaquepts
  - Add: Fluventic Subgroup.

- E) Haplorthods
  - Add: Lamellic Oxyaquic Subgroup

Footnote:

D) Fluventic Endoaquepts - (MS- Arklabutla; TX- Manco & Pophers)

E) No OSD's affected in South Region

7) Miscellaneous Changes
Indianapolis MO

- Haplorthods
  - Add: Alfic Lamellic subgroup
- Glossudalfs
  - Add: Aquic Arenic & Arenic Oxyaquic subgroups
- Hapludalfs
  - Add: Arenic Oxyaquic subgroup

Footnote: No OSD changes in South Region for Haplorthods or Glossudalfs

- Arenic Oxyaquic Hapludalfs - (AR- Bulltown; FL- Chiefland)

8) Depth of Eutrocryepts
Lakewood MO

- Revise keys to require ≥ 60% BS between 25 and 75 cm from soil surface (current criteria)

But add:

"or immediately above a root limiting layer if at a shallower depth."

Footnote: No OSD's affected in South Region

9) Torripsamments
Reno MO

- Add: Oxyaquic subgroup
  - Have water within 150 cm for 20 consecutive or 30 cumulative days

Footnote: No OSD's affected in South Region

10) Miscellaneous Changes
Portland MO

- Several changes to Cryic and Andic soils in far west

Footnote: No changes to OSD's in South Region

11) Revise Dystric subgroups
Reno MO

- Several changes to
  - Xerorthents and Xeropsamments in western US

Footnote: No changes to OSD's in South Region

12) Strongly Contrasting Particle-size Classes
Portland MO

- Add 2 new classes:
  - Loamy over ashy or ashy-pumiceous
  - Medial-skeletal over loamy-skeletal
- Added Definition of Diatomaceous mineralogy class

Footnote: No known OSD's affected in South Region

13) New Greatgroup and Subgroups for Aquerts

Hari Eswarin - NHQ

- Add Greatgroup: Sulfaquerts.
  - Salic subgroup
  - Sulfic subgroup
  - Typic subgroup

Footnote: Only for soils in Thailand

14) Add Spodic Subgroups
NSSC - Hipple/Engel

- Spodic Haplocryands
- Spodic Vitricryands

Footnote: No OSD's in South Region are affected

15) Clarify definitions of "Resistant" and "Weatherable" minerals.

NSSC - Engel

- Resistant: Add "iron oxides, kaolinite, gibbsite, chalcedony… as well as others" to list in text.
- Weatherable:
  - For clay minerals, add allophane to list of "also included".
  - For silt/sand size: Add dolomite to list. Clarify that calcite, carbonates, gypsum, and halite are **NOT** included, due to mobility and recharge.

Footnote: Several OSD's in SW part of South Region could be affected

16) Key to Mineralogy
NSSC - Lynn

- Several items, specify percent by weight.
- Several items, specify iron is Fe_2O_3.
- Kaolinitic - rewritten (no reference to non-expanding 2:1, gibbsite, or halloysite).
- Halloysitic - require < 10% smectite.
- Several items, specify extractions from fine-earth fraction.

Key to Mineralogy
NSSC - Lynn

- Glassy - add “glass-coated grains, glassy materials, and glassy aggregates.” - delete size fraction.
- Gibbsitic - delete reference to “hydrated aluminum oxides”
- Parasesquic - criteria revised, gibbsite removed.

Key to Mineralogy
NSSC - Lynn

- Several items - specify thickness criteria applies to mineralogy control section.
- Micaceous & Paramicaceous
  - Reduce required grain count percent.
  - Narrow applicable size range from 0.02-2.0 mm to 0.02 - 0.25 mm.
- Siliceous - Allow grain count. Change "extremely durable" to "resistant minerals".

17) Keying Order
Gene Mayhugh

- Coordinate varying taxa to key in the order: Anthraquic - Aquic - Oxyaquic.

Footnote: No OSD's affected in South Region

18) Mollic/Umbric Epipedon Thickness
NSSC Engel/Ditzler

- Restore mistakenly omitted criteria regarding carbon with depth.
- Depth requirements rewritten for clarity.

  No substantial change intended.

Footnote: No OSD's affected in South Region

Proposals to Taxonomy

- Give written **Comments** to any of the South Region NCSS Committee members by August 1, 2002.
- The committee will consolidate comments for proposals and submit them to NSSC for the **South Region**.

Thank You